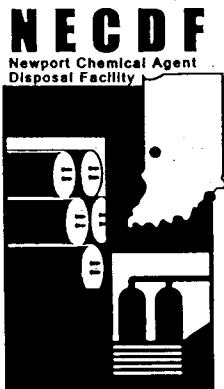




# information



## Newport Chemical Agent Disposal Facility Hydrolysate Facts

The Newport chemical agent stockpile will be neutralized by adding bulk liquid agent VX to a mixing tank containing hot (approximately 194 degrees Fahrenheit) sodium hydroxide and water. The liquid agent VX and hot sodium hydroxide and water are agitated for 90 minutes. The VX reacts with sodium hydroxide to produce a byproduct made up of water, sodium hydroxide and organic phosphorous and sulfur-containing compounds that is called hydrolysate. The neutralization process irreversibly destroys the chemical agent. Prior to off-site shipment, the hydrolysate will be analyzed to ensure there is no detectable agent remaining in the hydrolysate.

Although the hydrolysate is regulated under the Resource Conservation and Recovery Act (hazardous waste rules), it is less hazardous than many chemicals that are shipped daily over highways.

### Hydrolysate characteristics:

- Approximately 55 percent water, 40 percent organic compounds and 5 percent sodium hydroxide.
- Strong odor
- Moderately low flash point (*Flash point is the lowest temperature at which a liquid gives off ignitable vapor. Hydrolysate would have to reach a temperature of 127 degrees Fahrenheit before giving off any ignitable vapor.*)
- Caustic or corrosive (*Hydrolysate has a pH greater than 12 and is caustic. Industrial strength liquid drain cleaner has a greater pH and is more caustic.*)
- Density is approximately 1.17 (*Hydrolysate is thicker than water, much like liquid drain cleaner.*)
- 100 percent pumpable (*Hydrolysate is a liquid and easily transferred to and from tanker trucks.*)

### Hydrolysate Disposal:

The hydrolysate produced by the Newport neutralization facility will be transported off-site to a permitted commercial treatment and disposal facility for biotreatment and final disposal. A certified commercial hazardous waste carrier will transport the hydrolysate in accordance to all applicable local, state and federal regulations. In fact, several years ago the Army safely transported approximately 2,800 gallons of caustic hydrolysate to support an Army test program.

For more information,  
contact the Newport  
Chemical Depot  
public affairs office  
at (765) 245-4475, or  
the Newport Outreach  
Office at  
(765) 492-4445 or  
toll-free  
(866) 300-9034

Biotreatment, or biodegradation, is a biological process where bacteria digest organic compounds to form simpler compounds such as carbon dioxide, water and solids. Biotreatment is a common practice used in municipal sewage treatment plants.

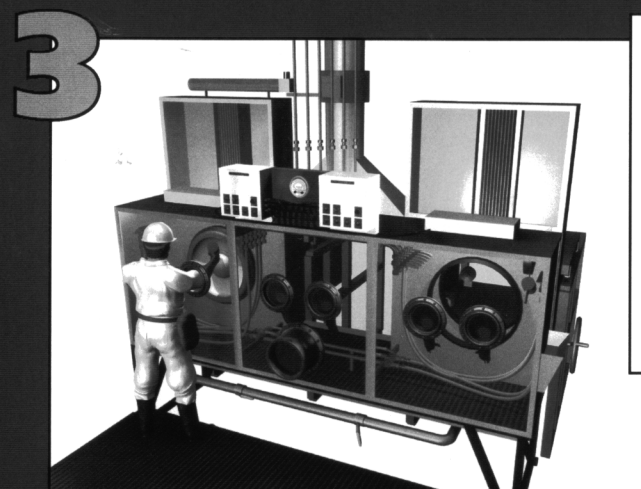
For more information, please contact the Newport Chemical Stockpile Outreach Office at (765) 492-4445 or visit the outreach office at 140 South Main Street, Newport, Ind.



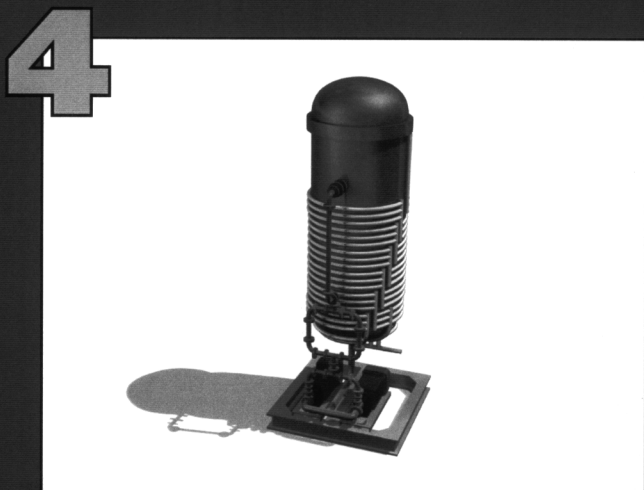
**1** Nerve agent VX containers are transported from storage to the utility building at the Newport Chemical Agent Disposal Facility.



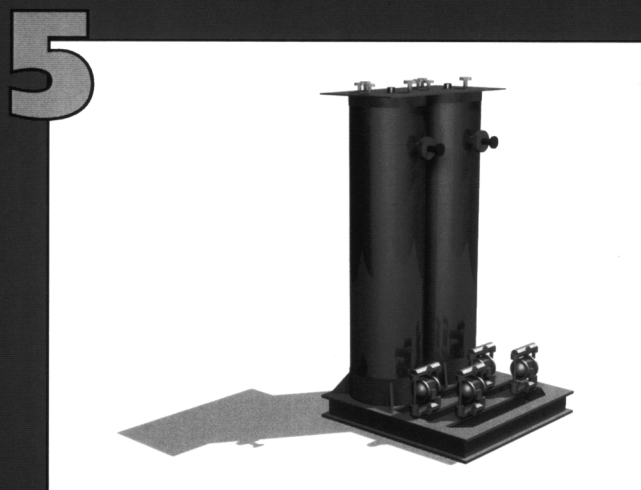
**2** A lifting beam and forklift move the containers to the chemical agent transfer system.



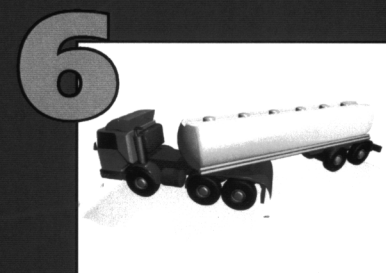
**3** While using the chemical agent transfer system, workers safely drain VX from the steel containers by attaching a specialized pumping unit.



**4** Nerve agent VX, mixed with sodium hydroxide and water in stainless steel neutralization reactors, is chemically destroyed.



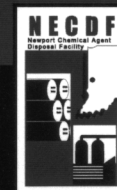
**5** The neutralization byproduct, called hydrolysate, is held in special tanks.



**6** Licensed tanker trucks transport the hydrolysate off-site to a permitted commercial facility for final treatment and disposal.

# Newport

## ACCELERATED PROCESS



U.S. ARMY PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION